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PART 6 ECONOMIC ANALYSIS OF MONTANA'S TAX STRUCTURE

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PART VI

ECONOMIC ANALYSIS OF MONTANA'S TAX STRUCTURE

by

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A staff paper submitted through the Tax Study Task Force to the Montana Legislative Council Subcommittee on Taxation

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This portion of the Tax Study provides an economic analysis of each major component of the Montana tax structure. As explained in Part I of the Staff Papers, the economic analysis of taxation includes the distribution of tax burden, the effects that a tax may have on the economic behavior of individuals and business firms, and the administrative and compliance costs of taxes. This paper deals with each of our taxes separately. The section dealing with a particular tax first briefly describes the tax as used in Montana. Then, it evaluates the tax from an equity viewpoint (that is, the fairness of the distribution of its burden). Next, the effects that the tax may have on consumption patterns, availability of various types of productive resources, and methods of production are considered. Finally each section discussed the costs to taxpayers in actually complying with tax provisions, and the costs to governmental agencies of administering taxes.

Several different sources provide the information on which this part of the study is based. Most of the actual data concerning Montana taxes--especially the distribution of their burdens--was gathered during the course of this Tax Study. The Appendices to this chapter report in some detail the results of many of the research projects which provided this Montana data. Some of the analysis of the effects of our taxes on economic behavior is based on generally accepted economic theory. The applicability of this theory depends on the validity of the assumption on which the theory was based. In a number of cases, we just do not know how accurate these assumptions are. Thus, policy conclusions should be drawn from the theory only with great caution. In a few instances, research done in other localities provides background for this chapter.

The discussion in this chapter assumes the general acceptance of general value judgments. In the author's analysis of the equity of Montana taxes, he makes the assumptions that (1) maximization of consumer satisfaction is good, (2) public opinion favors taxation based on ability-to-pay, or, in a few instances, on benefits directly received from governmental services, and (3) peoples' incomes provide the most reasonable basis for measuring their ability-to-pay (although not necessarily the best tax base). The discussion of the effects of various taxes on economic behavior assumes that alteration of the economic decisions of individuals and business firms by a tax is undesirable, unless such alteration was a purpose of the tax. (For example, reduction in liquor consumption may be a goal of alcoholic beverage taxation.) Alterations in economic behavior are likely to reduce aggregate consumer satisfaction, which is considered to be undesirable by many. It should be kept in mind that administrative and compliance costs of taxes involve the use of productive resources. These costs should be considered in relation to the other characteristics of taxes.

PROPERTY TAXATION

Both the state and local governments in Montana utilize property taxaction as a revenue source. It provides most of the tax revenue for our

local governmental units and nearly sixty percent of combined state and local tax revenues. The base of this tax is the taxable value (which is explained subsequently) of real and personal property. Against this base the state levies various specific rates of tax to raise revenue for particular purposes (for example, .6 percent for the state university system, .1 percent for bond retirement). Subject to certain restrictions, each local unit of government levies a tax rate against the total taxable value of property in its boundaries to raise the revenues needed by it.

Specifically, the operation of this tax involves several steps. The The first is the appraisal of each piece of taxable property. Most types of property are appraised at the county level by an appraisal office or by the county assessor, subject to guidelines furnished by the State Board of Equalization. The property of public utilities and the net proceeds from mining operations (a separate topic which is discussed later) are assessed by the Board of Equalization.

Each assessed value is multiplied by a percentage depending on the type of property, and the result is taxable value. This system of percentages is called a classified property tax; its rates are listed in Appendix 1 to Part VI. If the State Board of Equalization determines that the general level of assessment differs among counties, it may order these levels adjusted upward or downward, subject to various legal restrictions.

As previously mentioned, the state levies its tax rate on the sum of these taxable values. Each local governmental unit divides the amount of tax revenue it needs by the total taxable value of property (both locally and state assessed) within its boundaries to determine the rate of its tax on property. This rate is commonly called a mill levy, which means the number of dollars of tax per $1,000 of taxable value. Each county treasurer computes the total amount of tax levied on each piece of property in the county and bills the owner of the property for the amount. If the tax is not paid, it becomes a lien against the property. The administration of the property tax is a very important consideration in its fairness, as we shall see in the following section.

Burden Distribution

The fairness of property tax burden depends on both the administration and the nature of the tax itself. If two parcels of property of the same type within a taxing jurisdiction are assessed a different percentage of their true market value, then the person with the higer assessment will be discriminated against; because he must pay more tax than the other person with property of the same value. Since the appraisal procedure for tax purposes involves the judgement of the appraiser, inaccuracy in assessments is likely. The fairness of property taxation itself involves the relations between the tax and economic ability, and between the tax and benefits received from governmental services.

The Fairness of County Assessment

In order for property taxation to be equitable on certain types of property--for example, dwellings--the assessments must all be proportionate to the market value of property, and all property must be assessed, unless the market value has been disturbed by such factors as speculative influences. If these assessments are not in proportion to market values, people with high assessments will pay more than their share of tax, and those whose assessments are below the average proportion will pay less than their share. And of course unassessed property pays no tax. The problem of determining fair market value applies both to real estate and to personal property, while the problem of property which escapes taxation completely applies especially to personal property, although the Montana land reclassification program discovered quite a few cases of unassessed real estate.

Empirical research indicates that there may be considerable inaccuracy in assessment of real property in the state. A study in Missoula County of the assessment of urban residences, which is probably one of the easiest types of property to appraise, showed that the ratio of appraisal value to market value differed from the average ratio by more than 18.2 percent for 32 percent of the residences. In other words, about 16 percent of home owners paid taxes of greater than 18.2 percent more than their fair share, and about 16 percent of home owners paid taxes which were less than their fair share by over 18.2 percent, if we assume that each sale represented the true value of the property. (See Appendix 4). The same study strongly suggests that there is even greater discrepancy in the assessment of commercial and rural property, although the sample sizes used in this portion of the study were too small to allow definite conclusions.

Similar studies in Lewis and Clark and Flathead Counties revealed similar amounts of assessment variation in those counties.

A comparison of the Missoula, Lewis and Clark, and Flathead County studies suggests that the ratios between taxable value and market value of property also vary from county to county. For urban residential dwellings, the amounts by which the ratio in Flathead County exceeded the ratios in Missoula and Lewis Counties was statistically significant. This higher ratio for Flathead County means that residents in that county paid more than their fair share of the State's levies on property as compared with residents in Missoula and Lewis and Clark Counties.

These studies of assessment inequity among property within counties and among counties utilized data from only three populous counties. Further study is needed in other counties before conclusions can be stated with certainty on a statewide basis. However, the results at hand strongly suggest that inaccurate assessments present a statewide problem in property tax fairness.

The assessment of personal property--which includes everything other than real estate--appears to be even more unfair than the assessment of real property. Only a fraction of some kinds of personal property is assessed. Many household belongings, personal effects, and intangibles escape taxation. Whether it is possible to assess these items effectively is indeed questionable. Appendix 1 includes a discussion of this problem.

State Assessment of Public Utilities

As mentioned earlier, the State Board of Equalization has the responsibility of appraising most public utility property (including railroads) for tax purposes. The taxable value of public utilities is then apportioned to local governmental units on the basis of the units of physical property which a utility has located within each county; for example, miles of railroad, miles of wire. Each utility yearly must supply the Board of Equalization with a report containing the information that the Board deems necessary to make its assessment. Such information includes the number of miles of railroad located within and without the state, the cost of construction, the original cost and accrued depreciation of property, the number of all kinds of rolling stock, gross revenues, expenses of operation, and the market value of the utility's stocks and bonds.

In order to determine the full value of a utility, the Board of Equalization must rely on such factors as the total stock and debt, the net income, and various measures of the cost of the utility's plant. Stock and debt value and the cost of assets yield direct estimates of a utility's value. Earnings provide an estimate when they are capitalized. (Capitalization of earnings refers to the process of determining the present value of a series of future yearly earnings.) Each of these factors must be considered in the light of its ability to indicate the market value of the utility. For instance, where stock is freely traded on the market, stock and debt would indicate what investors determine the market value of the utility to be. But if the stock is wholly owned by a parent company, it may be a poor indicator of value.

Several adjustments must be made to these indicators of utility value. Nonoperating property such as investment in affiliated companies and lands held for non-utility purposes (for example, forest lands which are subject to local assessment) must be substracted from total stock and debt. The estimated earnings from these substracted assets must be substracted from net income, and their value must be substracted from total assets in determining the value of the utility's plant. The operating income of railroads as calculated from Interstate Commerce Commission accounting procedures must be adjusted because these figures reflect unduly rapid depreciation of assets and consequently understate income.

If a company is interstate in nature, it is necessary to determine the amount of its total value to be attributed to Montana. To do this, the Board of Equalization uses a number of allocation factors, some of which indicate quantity of assets and other of which indicate asset usage.

Examples of quantity elements are: original and reproduction cost, plane hours, plane miles, wire miles, track miles, and car and locomotive miles. Usage elements include operating revenue, nonoperating income, ton miles, passenger miles, originating and terminating tons, and telephones. The average of such values in Montana is multiplied by the total value of the utility's operating property to determine the full value of the company's property located in Montana.

This full value is then multiplied by a percentage to reflect the fact that property in Montana is assessed at only a portion of its full value. (Forty percent is the Board of Equalization guideline for city and twon lots and improvements.) The value of locally assessed property (for example, automobiles) is then substracted from the resulting product. The remainder if apportioned among the various local governmental units according to the criteria, such as miles of track, mentioned earlier.

Public utilities, including railroads, historically have been assessed at higher percentages of fair market value than locally assessed properties. The Board of Equalization has been following a program of gradual reduction in the level of utility assessments in order eventually to achieve equity among utilities between the assessment of utility and other types of property. However, such equity has not yet been fully achieved between utility and other property as shown inTable 1. The assessed values of utility property as percentages of various estimates of the full value of utility property in Montana range from about 41 percent to 66 percent for the three basic types of utilities. However, because the full value of utility and other property are determined by different methods, the values determined may not be directly comparable. As a result, the forty percent factor applied to town lots and improvements is not necessarily appropriate for utility property.

To the extent that property taxation on utilities is shifted--that is, passed onto consumers as an increase in price--any excessive amount of tax would discriminate against the users of relatively large amounts of utility service. It would also be regressive, for low income families spend a larger percentage of their income on utility services than higer income families. Any amount of any excess tax burden on utilities which is not shifted would tend to discriminate against utility compamy stockholders.

The figures in Table 1 suggest that some inequity remains in the taxation of different firms within the whole utility industry because assessed values as a percentage of the values determined by the Board of Equalization or of stock and debt values vary somewhat from company to company. However, many counties in the state rely heavily on utility property as a source of local tax revenue. As a result, a sudden, large change in the level of utility assessments would cause serious fiscal problems for these counties.

The Board of Equalization is also involved in the assessment of the net proceeds of mines. This topic is discussed along with severance taxation in a separate section of Part VI.

TABLE 1

LEVELS OF ASSESSMENT OF PUBLIC UTILITIES IN MONTANA

	Five Year Average of Net Earnings as a Percentage of Equalized Value[a]	Assessed Value as a Percentage of Value Determined by Board of Equalization	Assessed Value as a Percentage of Stock and Debt Value
RAILROADS:			
Railroad 1	1.94	66	84
Railroad 2	3.69	52	53
Railroad 3	3.01	52	55
Railroad 4	2.91	52	55
Railroad 5	5.08	52	85
Average of Five RR.	3.33	55	66
TELEPHONE, POWER, AND GAS UTILITIES:			
Utility 1	4.07	48	37
Utility 2	2.67	58	51
Utility 3	4.71	47	39
Utility 4	4.31	51	42
Utility 5	3.38	55	59
Average of 5 Utilities	3.83	52	46
PIPELINE COMPANIES:			
Pipeline 1	7.03	50	79
Pipeline 2	6.49	41	60
Pipeline 3	3.57q	54	b
Pipeline 4	6.58	42	b
Pipeline 5	4.85	52	b
Average of 5 Pipeline Companies	5.70	48	

[a]Equalized value is 2.5 times assessed value.
[b]A subsidiary company

Source: State Board of Equalization

Not only property tax administration but also the general nature of property taxation has fairness implications. The next section discusses these implications.

OVERALL FAIRNESS OF PROPERTY TAXATION

It is sometimes argued that property taxation is justified because owners receive disproportionately large amounts of benefit from governmental services. However, a study reported in Appendix 3 estimates that the direct governmental benefits received by property owners valued at their cost amount to only about 10.5 percent of the property taxes they pay in Montana.

Data reported on a sample of 973 Montana individual income tax returns for 1963 showed no statistically significant differences in the percentage of income accounted for by property listed as a personal deduction by taxpayers in the $3,000 - $5,000; $5,000 - $7,500; $7,500 - $10,000, and $10,000 - $15,000 income brackets. However, the percentages in these brackets were significantly lower than in the 0 - $3,000 bracket, and they were significantly higher than in income brackets above $15,000. The data may have been contaminated somewhat by the fact that an amount of tax may have been excluded from these figures by being claimed as a business deduction instead. However, it is likely that the tax is regressive at low and high income levels and roughly proportional between about $3,000 and $15,000, a range which includes most families.

Property taxes paid directly on non-business property by individuals are levied primarily against real estate and automobiles. As a result, people who use greater than average portions of their incomes for housing and automobiles tend to be discriminated against by this tax. The discrimination against consumers who spend relatively large amounts for housing is likely to be especially burdensome on large families. However, this discrimination may be offset by the fact that the income implicit in the use of homes and autos by their owners is not subject to income taxation.

The above analysis of property tax fairness applies for levels of property taxation which were initially imposed during the time that the current owners have owned the property. However, a somewhat different situation prevails for a level of taxation of real estate which prevailed prior to the purchase of property by present owners. The basic determinant of property's value is the future income it is expected to produce. A permanent property tax, if not shifted, reduces this income, and taxation of noncommercial property probably cannot be shifted. Thus, the burden of a property tax will probably be reflected in property prices, or <u>capitalized.</u> The purchaser who pays a price for property which capitalizes the tax does not bear the burden of the tax, for the burden is reflected in the price he pays. Only tax increases which occur after he buys the property will burden him, and because of capitalization that burden will probably be a multiple of the additional tax. On the other hand, if taxes are reduced, the value of his property will probably go up by a multiple of the tax reduction.

Property taxation has existed in Montana since statehood. As a result, a considerable portion of the property tax has probably reduced the prices

paid by current real estate owners, especially for land (as contrasted with improvements). Any tax reduction which exceeds fairly recent tax increases would give current owners a windfall gain, and any tax increase would probably be a serious burden as a result of capitalization. The distribution of this burden would involve the same equity problems that are discussed in the previous paragraphs of this section on tax equity. Consequently, on grounds of fairness there is an argument for avoiding large, rapid changes in property tax levels.

Effects on Economic Behavior.

Theoretical analysis shows that property taxation may alter the consumption patterns of individuals, the availability of certain types of productive resources, and the methods of production used by business firms. Alterations of this type tend to occur when a tax does not apply equally to all types of consumption, productive resources, or production methods.

As we mentioned above, property taxation bears heavily on dwellings and automobiles. There are other types of consumption--for example, nondurables and services--which are not included in the property tax base. Consequently, the purchase of autos and expensive home is likely to be discouraged in favor of untaxed items. This alteration of output is likely to reduce total consumer satisfaction.

Property taxation may also affect resource allocation by being heavier on some industries than others; it may also affect the consumption of some items more than others. Industries with higer tax burdens--if these burdens have not been capitalized--are likely to have higher costs, and to attempt to charge higher prices for their products. Such higher prices would tend to discourage consumers from buying the products of the highly taxed industries, and to encourage the consumption of other things.

Improvements to real estate in addition to residential dwellings bear considerable property tax burden. Most of these improvements (for example, buildings and irrigation systems) are resources useful in production . The tax reduces the net rate of return from improvements to real estate. This reduction in return may discourage investment in real estate. This reduction in return may discourage investment in real estate improvements compared to other types of investment. As the availability of productive resources changes, their costs will also change. Cost changes are likely to affect both the composition of output in our economy and the production methods used by business firms. The change in output composition, or reallocation of resources, will tend to reduce aggregate consumer satisfaction.

When cost changes due to taxation alter production methods used by business firms, a reduction in overall operation efficiency is probable, for business firms can be expected to be optimally efficient (within the limitations of human error) in the absence of artificial influences. Property taxes will tend to discourage production methods utilizing dis-

proportionately large amounts of taxed items (namely buildings, equipment, and inventories as contracted with human labor). But the study of the effects of Montana taxes on the operating decisions of business firms which is summarized in Appendix 6 suggests that Montana property taxes may not have a large effect on production methods.

Nevertheless, since much of the theoretical analysis in the above paragraphs and in subsequent sections of this chapter has not been validated with empirical research, it should be used to guide policy formulation only with great care.

Administration and Compliance Costs.

Appendix 7 to this chapter presents a detailed discussion of the administration and compliance costs of property and other Montana taxes. This study implies that the administration of personal property taxes in terms of cost of real estate taxation. Costs as a percentage of taxes collected appear higher in counties with small amounts of taxable property than counties with relatively large amounts of property. (See Table 2). On the average, it costs Montana counties about two percent of tax collections to administer taxation of real estate and approximately eight percent to administer personal property taxation. These costs do not include any costs of a county reclassification office because the study reported in the appendix was unable to estimate these. The costs of the State Board of Equalization which can be allocated to property taxation amount to about .04 percent of total property tax collections in the state.

TABLE 2
ESTIMATED COSTS OF PROPERTY TAX ADMINISTRATION BY MONTANA COUNTIES AS A PERCENTAGE OF TAXES COLLECTED

Counties Ranked by Amount of Taxable Property	Administrative Costs ÷ Tax Collected		
	Real Estate	Personal Property Other than Automobiles	Property and License Taxes on Automobiles
Five largest	1.1%	5.8%	6.0%
Middle sized	1.9	8.0	8.7
Smallest	2.6	10.5	11.2

The compliance costs to individual taxpayers of the taxation of real property appear to be negligible. Only nine of a sample of 342 payers of this tax reported any compliance cost at all, and these nine reported costs averaged less than two percent of tax liability for the nine taxpayers. Personal property tax compliance costs, however, seem to be moderate. For a sample of 227 taxpayers, the time it took to comply with personal property taxation averaged 45 minutes per year. If this time is valued at two dollars per hour, the costs amount to 1.6 percent of the tax collected. If it is valued at the taxpayer's estimate of the worth of his time or at his average hourly earnings the respective cost percentages are 2.1 percent and 4.0 percent. The corresponding percentage

figures for automobile registration, which includes both personal property taxation and the $5 or $10 license fee per car are 2.8 percent, 5.2 percent, and 717 percent. The average taxpayer reported spending one hour eight minutes in registering his vehicle(s). The compliance costs of all property taxes averaged 1.2 percent for a sample of 4 unincorporated businesses and 71 corporations.

Summary of Property Taxation

Property taxation is subject to considerable criticism on equity grounds. Inaccurate assessment favors some taxpayers and penalizes others. On the average, the tax appears somewhat regressive. Where non-business property taxes apply to homes they tend to discriminate against people who prefer expensive homes. To the extent that the tax on businesses is shifted, it will penalize consumers of the products of heavily taxed industries. However, when the tax on real estate is capitalized, these burdens will tend not to apply currently unless the rate of the tax is changed. Tax capitalization provides an argument against large changes in the level of the tax on real estate. Capitalization does not occur to a large extent with most personal property.

The high level of the tax on improvements to real estate and the products of certain industries is likely to discourage purchase of these items with resource misallocation as a result. Administrative costs of real estate taxation are comparable to a number of other taxes, but the administrative costs of personal property taxation are well above the average. Compliance costs are negligible for real property taxation, but apparently moderate for the personal property tax. Thus, we may conclude that the costs, as well as the problems, of collecting personal property taxes provide an argument against such taxation.

INDIVIDUAL INCOME TAXATION

The individual income tax is now the largest source of state revenue in Montana. In the fiscal year ending June 30, 1966, the Montana income tax brought in approximately $21.4 million. This amount constitutes about one-fifth of total tax collections by our state government.

An important consideration in the structure of the tax, according to general agreement, is to tax individuals according to their economic ability, which is presumed to be measured by taxable income. The base of this tax is very similar to the base of the federal income tax. With only minor exceptions, taxable income under the Montana tax is defined as federal taxable income with certain adjustments. Montana income tax deducted from the federal tax base and interest income from state and local bonds must be included in taxable income; and federal income tax paid, interest on obligations of the federal government; and income from dividends paid by national banks located in Montana may be substracted. There are special provisions concerning wages, salaries, and business income earned outside Montana. Individuals who were not Montana residents for the whole year

may use income taxes levied by other states on such out-of-state income as a credit against their Montana tax liability.

The rates of the Montana tax are much lower and much less progressive than the federal tax. Whereas the federal tax rates range from 14 percent on the first $1,000 of taxable income to 70 percent on income exceeding $200,000 for single taxpayers ($400,000 for married couples), the Montana tax varies from 1.1 percent of the first $1,000 of taxable income to 7.9 percent of income over $7,000. Although the federal tax allows married couples to file joint returns and take advantage of tax brackets twice as wide as single taxpayers, Montana law allows no such provision.

The tax is administered by the State Board of Equalization, but much of the actual work connected with its collection falls on individual taxpayers and business firms. Subject to audit by the Board of Equalization, individuals report their own income and compute their own tax liabilities. Employers are required to withhhold an amount approximating the tax from employees' wages and submit the amount to the Board.

Burden Distribution

Consideration of the fairness of individual income taxation involves the definition of income, the expenditures and types of income excluded from taxable income, and the rate structure.

Definition of Income

We shall deal with each of these considerations separately. For tax purposes, income is generally defined ad the amount of wealth (mostly in the form of money) actually realized by a person during a year. Certain items which almost all economists conceive of as income are not included in the Montana definition of income for tax purposes to facilitate the administration of the tax. Examples of such items are the gain from do-it-yourself projects and the net return from owner-occupied homes[3]. Per dollar these items undoubtedly add just as much to the economic well-being as other types of income which are subject to taxation. Therefore, their tax-exempt status provides a special advantage to those taxpayers who have greater than average amounts of income of this type. (Home owners are especially favored as compared with renters.) Favoritism of this type is probably considered to be unfair by most people. However, administrative considerations would make it very difficult for Montana to do anything about this unfairness, for the items involved are not subject to ready detection and measurement in money terms.

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[3]The owner of a home could earn interest on the money he has invested in his home, and he must pay interest on any amount he has borrowed to finance the home. If he did not think that his house gives him enough satisfaction to cover the interest he could earn plus the interest he pays, he would probably sell the house. Consequently, the interest he could earn on the amount he has invested in his house less the interest he pays on any mortgage may be considered to be income to him.

The expenditures and certain types of income, which are included in the definition of income for tax purposes but are excluded from the amount of income actually subject to taxation, undoubtedly constitute much larger magnitudes than items of income which are not included in the tax definition of income. Furthermore, they are amounts which are quite readily measurable especially since they are subject to audit by the Internal Revenue Service. These items which are expressly excluded from taxable income include deductions, which are expenditures made by the taxpayer; personal exemptions, which are flat amounts of income per taxpayer or dependent of the taxpayer; and several types of income--namely about half of the income realized from capital gains, interest on securities of the federal government, dividends of national banks located in Montana, income from social security and certain other retirement plans and several other minor items.

Deductions

The major items which may be deducted from oncome in determining the amount subject to the Montana tax are medical expenditures above a certain minimum; contributions to various charitable and educational organizations; interest paid on amounts borrowed; federal income tax paid; certain other taxes paid including property taxes, gasoline taxes, and retail sales taxes; and various miscellaneous deductions including casualty losses exceeding $100, alimony payments, and tools and uniforms necessary in holding a job. In lieu of itemizing these deductions, a taxpayer may deduct a flat ten percent of his Montana adjusted gross income up to a maximum of $500. The supposed rationale for allowing these deductions is that the items deducted are uses of income which do not represent economic ability for the taxpayer. It is argued that medical expenditures are necessary to remain economicaally productive and often to stay alive, so that it is fair to make them tax-exempt, especially since they represent a much higher cost for some people than for others. Many of the miscellaneous deductions are not deductions by the taxpayers which add to his economic status.

Legislatures have probably allowed deductions for contributions in response to a desire to encourage contributions. An argument sometimes made for allowing tax-free status for contributions is that the objects of the gifts in some instances would need to be done governmentally if they were not provided through charity. However, some of the objects would not be done governmentally. Contributions represent a voluntary outlay as do most expenditures by people.

Interest paid by a taxpayer is simply an expenditure by him for a service, the use of money to make it possible for him to enjoy consumption at present rather than at sometime in the future when he would have enough money saved to buy without borrowing. The interest paid on borrowed money is economically no different from money spent for most other goods and services, and it thus represents economic ability of the taxpayer. It is argued by advocates of the deduction that interest received by the taxpayer is taxable income, so interest paid ought to be deductible. By this line of reasoning, nothing would be taxable. The bulk of expenditures by individuals becomes wages and salaries. The remainder becomes rents, interest,

and profits. Wages and salaries, rents, interest and profits are all forms of taxable income.

Federal income taxes, property taxation, and certain other taxes which are allowed as deductions are themselves primarily attempts to measure economic ability of taxpayers. The major result of allowing these taxes as deductions is to reduce the income tax base and thus state governmental revenues. If neither the federal nor the state government allowed the income tax of the other as a deduction, then it would be conceivably possible for the sum of their rates to exceed 100 percent if rates were increased, but the federal tax allows the state tax deduction. Gasoline taxation is actually a charge levied against motorists for highway usage. Allowing this tax as a deduction thereby favors those people who choose to drive a lot in contrast to those people who engage in other forms of consumption.

As Appendix 4 to this chapter shows, deductions as a percentage of income in total vary widely among taxpayers in various income brackets. In all of the income brackets analyzed in this appendix, the estimated coefficient of variation of total deductions as a percentage of income exceeded one-third (that is, the average amount by which the deductions of taxpayers with similar incomes differed from the average magnitude of deductions by over one-third). Deductions were of considerably more value to some taxpayers than others, independent of any income differences among taxpayers. If this variation from among taxpayers was due to differences in economic ability, then most people would probably agree that the variation increased the fairness of the tax. Deductions or medecal expenses and some miscellaneous items probably do represent differences in economic ability, but we have strongly questioned whether contributions, interest, and taxes paid are really uses of a taxpayer's income which do not reflect economic ability. The contributions, interest, and tax deductions account for the majority of the variations in total deductions.

Furthermore, on the average total deductions are regressive. (See again Appendix 4.) Regressivity of this type considerably reduces the over-all progressivity of the tax. Many people seem to favor progressivity in income taxation. Even if only a proportionate burden distribution of the tax structure is desired, an income tax must be progressive to offset the regressivity of many other state and local taxes. Available data shows that deductions for medical expenses and for taxes other than income taxes paid are progressive. Deductions of contributions and federal income tax deductions are regressive; the federal income tax deduction is the item primarily responsible for the overall regressivity of deductions.

In summary, whether Montana's individual income tax and particularly certain deductions, detract from rather than add to the fairness of the tax is open to serious question. Contributions, interest, and taxes paid appear to be outlays which do reflect taxpayers' economic ability. These deductions help some taxpayers much more than others and they reduce tax revenue considerably. On the whole, deductions decrease tax progressivity.

Exemptions

The flat $600 that the taxpayer may substract from taxable income for himself and each eligible dependent (plus an additional $600 if he or his spouse are over 65 or blind) is supposed to allow each individual a minimum standard of living tax-free. Exemptions add to the progressivity of the tax, and their amount varies considerably from taxpayer to taxpayer, reflecting differences in family sizes, But whether $600 represents the optimum amount of tax-free income, and whether subsistence costs as much for a spouse or child as for a single person may be questioned. An exemption is worth more to a high-income taxpayer than to a poor one. A $600 exemption saves a person with taxable income of $7,000 or more $47.40 in tax liability, while it saves a person with less than $1,000 only $6.60.

Rate Structure

Table 3 shows the rates of the Montana individual income tax. These rates are rapidly progressive on taxable income up to $7,000 and proportionate thereafter. The progressivity of these rates and personal exemptions are the factors primarily responsible for the overall progressivity of the tax, which is shown by the data in Table 4. The data in Appendix 4 demonstrates that the tax would be much more progressive were it not for the deductions allowed.

TABLE 3

RATE STRUCTURE OF THE MONTANA INDIVIDUAL INCOME TAX, 1966

Montana Taxable Income	Rate
$ 0 to $1,000	1.1%
1,000 to 2,000	2.2
2,000 to 3,000	3.3
3,000 to 5,000	4.5
5,000 to 7,000	5.6
Over $7,000	7.9

The last column of Table 4 shows the average amount of Montana plus Federal income tax paid by people in our state as a percentage of income. The combined taxes also are progressive on incomes up to $100,000, where the average rate is 27.5 percent.

Although the Montana tax is progressive on the average, there is considerable variation in the liabilities of taxpayers in various income brackets, as shown by the estimated coefficients of variation in Table 4.

TABLE 4

ESTIMATED AVERAGE INDIVIDUAL INCOME TAX LIABILITY BY INCOME BRACKET IN MONTANA, 1963

Federal Adjusted Gross Income	Average Montana Tax	Estimated Coefficient of Variation of Montana Tax[a]	Montana Tax as a Percentage of Income	Montana plus Federal Tax as a Percentage of Income
$ 0 - $ 3,000	6	214%	.3%	4.3%
3,000 - 5,000	28	72	.7	7.9
5,000 - 7.500	59	59	1.0	9.6
7,500 - 10,000	112	51	1.3	11.8
10,000 - 15,000	229	42	1.9	14.0
15,000 - 25,000	552	30	2.9	17.7
25,000 - 50,000	1,118	32	3.4	22.2
50,000 - 100,000	2,250	36	3.5	27.5
Over $100,000	5,458	--	2.7	27.1

[a]Adjusted to exclude the estimated effect of income variation within income brackets on tax liability.

Source: Appendix 4, Part VI, Montana Tax Study Staff Papers; Internal Revenue Service, 1963 Statistics of Individual Income Tax Returns.

This variation is due to the various exclusions from taxable income discussed above. Many of these exclusions do not reflect differences in the economic ability of taxpayers.

Effects on Economic Behavior

The effects of the income tax on economic behavior involve the same general factors as income tax equity; the definition of income, exclusions from taxable income, the rate structure, and the overall concept of taxing income. Special treatment of certain types of income and expenditures are likely to affect consumption patterns and mayalter the availability of certain types of productive inputs. Income taxation as such is more likely to affect input availability (for example, the number of people willing to assume managerial positions) than it is to have any other effect.

We have previously mentioned that certain items which are economically defined as income are not included in the definition of income for tax purposes due to administrative difficulties. One example is the productivity of do-it-yourself projects such as painting one's own home. The tax-free status of the implicit income from such projects encourages their

consumption and thus the quantity of economic resources allocated to their production. Since a free market economy normally tends to allocate resources in a way that will provide maximum consumer satisfaction, given a distribution of income, then any reallocation which was not specifically desired probably reduces aggregate satisfaction. Accordingly, the exclusion of items from the definition of taxable income for administrative reasons tends to produce a misallocation of resources as well as a degree of inequity.

Most income tax deductions provide a way to make certain outlays with income which is not subject to taxation, expenditures which tend to be encouraged because their tax-free status lowers their cost in relation to other products and additional resources are allocated to their production. As with items not defined as income, a misallocation of resources tends to result.

If deductible income is more available for some occupation than for others, then people may be encouraged to work in the occupation where deductions are more possible, and taxes lower. Conversely, where legitimate business expenses cannot be substracted from taxable income in certain endeavors, employment in the fields involved may be discouraged. For example, the cost of education necessary for entry into most professions is not deductible, which may reduce the number of people working in the professions. This shortage of professional people could reduce overall worker and consumer satisfaction.

The existence of income taxation itself probably discourages the taking of risk, and the existence of the tax and the progressivity of its rates might affect work incentives. The rate of return on money loaned to business firms for investment (or to consumers for spending) generally includes an amount to compensate the lender for any risk he may be undertaking in making the loan. This premium is an amount in excess of any loss the lender may think possible. Lenders tend to demand such a premium for risk, because most poeple just do not like to take large risks. This aversion to risk is the reason that people buy so much insurance. Since the premium for risk is a part of interest income, it is taxed--the greater the risk, the greater the premium and the greater the tax. On the other hand, if the lender makes a loan with little or no risk (a short-term federal government bond is an example of a no-risk loan), he pays little or no tax. Safety is not taxed. Because lenders usually have the alternative of riskless loans, an income tax tends to discourgae the making of risky loans by reducing the net return to the lender. In turn, there is less money to finance risky investment expenditures, and economic growth is likely to be retarded. Like most other non-neutral economic effects of taxation, this discouragement of risky investment is likely to reduce aggregate satisfaction.

It is often argued that a personal income tax, especially a progressive tax, reduces the incentive of people to work. High tax rates could induce an individual to substitute leisure for working additional hours.

However, studies which have been made concerning the effect of the tax on work incentives do not indicate such a substitution effect. Many people have little opportunity to work less because of the tax; they work a forty hour week or they do not work. But even studies of people who have discretion over the amount they work indicates little effect of the tax on incentives. Perhaps in the professions where this discretion is more apt to exist, the work is its own reward. Another possible explanation for the lack of effect on incentives is the income effect, which means that as the tax takes away a person's income, he may work harder to maintain his living standard. In any event, current tax rates do not appear to have serious effects on incentives to work.

Administrative and Compliance Costs

The cost of administering the Montana individual income tax is estimated by Appendix 7 2.1 percent of tax revenue. This cost is typical for a major source of state tax revenue. Personal income tax compliance costs have not heretofore been investigated in detail. Research during this tax study shows that compliance costs to individual payers of the tax, as estimated by the taxpayers average 14.9 percent of tax liability for the taxpayers studied, assuming that the time of taxpayers is valued at what the taxpayers themselves estimate their time to be worth. If the time is valued at the average rate of earnings per hour of the taxpayers, the cost figure is even higher. The reported costs of withholding the tax from employees' wages averaged 15.0 percent of tax withheld by a sample of proprietorships and paertnerships, and 5.2 percent for a sample of corporations. However, it could be that the tax causes individuals and firms to keep more records than they otherwise would and thus to improve their own efficiency. And withholding has proved to be mandatory if a personal income tax is to be collected effectively. A change in rates would have little effect on these costs.

The costs of complying with the Montana personal income tax are significant. Nevertheless, if tax revenues are not raised from this source, they must be obtained from some other tax which is also likely to have substantial administrative and compliance costs.

Current administrative procedures and problems of the tax, as well as the administrative and compliance costs, probably deserve mention here. In the past, the Board of Equalization has relied on information from audits of the federal Internal Revenue Service for its own auditing activity. The fact that Montana's definition of taxable income is largely based on the federal definition is a major reason for its reliance. Recently, the Board has increased the scope of its own auditing activities. The accessibility of electronic data processing equipment has made this increased scope feasible. The current level of auditing activity seems fully justified in terms of the revenue produced, but it does not appear that a major increase would be justified by the increase in revenue it could be expected to produce.

Two significant problems in tax administration are the deductibility of federal income tax paid and the fact that income splitting is not allowed for married couples, because Montana's provisions concerning these matters differ significantly from those of the federal government. The amount of federal income tax which is deductible is not the amount which appears on the taxpayer's federal returns for the year in question, but instead consists of the sum of various other figures. The lack of a provision for income splitting for married couples often necessitates the arbitrary apportionment of income and deductions between husband and wife, but this lack increases tax progressivity and revenue. These problems are discussed more fully in Part VIII. A potential future problem is a reduction in the convenience with which the Board of Equalization can gain access to information from federal income tax returns. Federal returns filed in Montana are not stored in Helena, but it is planned that most of these returns will be stored in Salt Lake City in the future. The inconvenience to the Board in obtaining data from the returns resulting from the move may necessitate additional auditing by the Board independent of federal audits.

Summary

An important consideration in personal income taxation is to tax the economic ability of individuals, which is thought to be measured well by income. The progressive rate structure and exemptions of the tax make its average burden progressive; however, as a result of favorable treatment for certain types of income and the allowance of deductions for several items which do not seem to reduce taxpayer ability, the tax may not be fairly based on ability-t-pay. The amount of tax liability as a percentage of income varies widely among taxpayers with similar incomes. Additional results are likely to be an encouragement of the activities which are given favorable treatment and a consequent misallocation of resources. The tax may also have other effects on economic behavior such as the discouragement of risk-taking. Nevertheless, the reader should keep in mind the basic advantages of income taxation in reaching the economic ability of taxpayers without large-scale economic misallocations.

CORPORATE LICENSE (INCOME) TAXATION

Most states which levy personal income taxes also tax corporate income; Montana is no exception. The rationale mentioned for such taxation is varied. Among them are the assertions that corporations themselves have economic ability (even though they are owned by individuals), that if individuals are taxed, corporations should be too, and that the tax provides a good source of revenue.

The Montana tax is 5.25 percent of the net income of corporations from their operations in the state, with a $10 minimum. Net income is defined as revenues less legitimate business expenses, but federal income tax paid is not allowed as a deduction. Corporations with ten or fewer stockholders may elect to pay the $10 minimum fee and file as a partnership for income tax purposes, thus avoiding the corporate tax.

Net income from operations based solely in Montana is, of course, the total net income for intrastate corporations. But for corporations which do business in other states too, it is necessary to determine how much of the corporation's total income was earned in Montana. Such interstate corporations may figure thei income for Montana tax purposes in either of two ways. A corporation may keep separate books for its operations in our state. Or the firm may compute the percentages of its property, payroll, and sales located in Montana, figure the average of these three percentages, and multiply this average percentage by its total income. The product is Montana's share of the income. The apportionment of interstate corporations' income among the states creates possible adminiatrative and compliance problems which are currently being considered by Congress. These alleged problems are beyond the scope of this study, so let us consider the equity of the tax.

Burden distribution

The evaluation of the distribution of the state's corporate income tax depends on whether or not the tax is directly shifted forward to consumers in the form of higher prices. However, there remains considerable disagreement among economists whether the tax is shifted. It it is, the tax is a sort of sales tax with regressive burden. Furthermore, it probably discriminates against the consumers and producers of particular products, if shifted. Some industries have greater profits per dollar of sales and consequently more tax to shift. Consumers of these products would bear a greater than proportionate share of the tax. If this tax burden reduced purchases of these products the incomes of those furnishing inputs to the industry would probably go down.

Should all or part of the tax not be shifted, the burden of the unshifted portion falls on those who were stockholders at the time that the tax was increased or initially levied. Since the bulk of corporate stock is owned by people with incomes over $10,000 per year, the burden of the tax will be very progressive as indicated by Appendix 4. However, if the tax change is expected to remain, then the immediate burden on the stockholders is likely to be considerably more than the tax, for the tax is likely to be capitalized. Capitalization refers to the process of taking account of a tax in the price of an asset. A tax on corporate income which is expected to continue will reduce the future yearly return expected from the stock. With a smaller future expected return, the stock will be worth less, for it is future expected returns which determine the price of common stock. This capitalization process may cause a burden on stockholders of ten or twelve times the yearly tax liability. There appear to be no rationale for penalizing those who happen to own corporate stock when the tax is raised.

When the burden of the tax on stockholders is completely capitalized it is not borne each year by stockholders. If the current owner of the stock was the owner when the tax was imposed or increased, he bore the burden at that time through the reduced value of his stock. If the stock was sold after the capitalization of the current level of tax, then the

present owner bears no portion of the tax burden, for the tax was completely accounted for in the lowered price he paid for the stock.

Over a long period of time, however, even a corporation income tax which is initially borne by stockholders through capitalization may place a burden on consumers in general. As the net return from corporate investment is lowered by the tax, corporate investment and consequently output could fall. Reduced output means reduced standards of living for the general public. Such a reduction is likely to be more pronounced for some industries than others, and thereby to place the heaviest burden on the consumers and producers of the products bearing the heaviest tax.

The discussion in the above two paragraphs outlines what may theoretically be expected to happen in the extreme cases of ocmplete shifting and no shifting of the tax. In reality, a situation between these two extremes seems to be a reasonable possibility. However, economists just do not know for certain just what the burden distribution of the tax is.

Effects on Economic Behavior

As we have seen, if the corporation income taxation is shifted to consumer either immediately or over a long period of time, it will probably raise the price of some products more than others. Consumption of the items bearing the most tax is likely to be discouraged as compared with consumption of products bearing little tax. Productive resources will tend to move from higher taxed to the lower taxed industried. Such a reallocation of resources can be expected to reduce aggregate consumer satisfaction--a point previously discussed. Again, however, we are dealing in the realm of hypothetical reasoning. And at the present level of the tax, the amount of any effects is probably small.

The same analysis concerning resource allocation applies to the extent that corporations sell to other corporations. If certain inputs purchased by one corporation from another are made more expensive, other inputs may be substituted. The result would be a decrease in business efficiency, because business firms can be presumed to be operating in the most efficient manner prior to the tax.

When the burden of the tax is not immediately shifted to consumers, it reduces the net rate of return from corporate investment. A lower rate of return may mean that fewer funds will be made available to finance corporate investment, and less investment will result. If less investment occurs, the levels of output and living standards will go down unless governmental fiscal policy counteracts the reduction in investment. Because of differences in the level of the tax from industry to industry, investment would fall more in some industries than others. This reallocation of resources would tend to penalize consumers of the output and owners of the inputs of the heavily taxed industries.

The theoretical discussion in the above paragraph assumed that lower rates of return on investment will lower corporate investment. Such an assumption may not be appropriate, however. For the nation as a whole, an overall reduction in the rate of return on corporate investment may not reduce the amount of investment, however. The amount of saving does not seem to depend on the rate of interest. People with savings appear to attempt to obtain the highest yield possible consistent with their safety requirements. Assuming that government borrowing remains constant, the only other potential borrowers are businesses and consumers. If businesses borrow the savings, then there is no reduction in the funds to finance investment; if consumers fo the borrowing the additional demand generated will tend to stimulate investment. Thus, an unshifted corporate tax may not reduce investment.

But even if investment in the nation stays the same, investment in Montana firms could go down, since the Montana tax can lower the net return from doing business in Montana, and leave unaffected the net return elsewhere. Nevertheless, as discussed in Appendix 6, of this chapter, the evidence does not show that existing levels of state and local taxes in the United States have had any effect on business investment in various states, and that Appendix 5 indicates that current Montana taxes seem to have little effect on the operating decisions of business firms.

Administrative and Compliance Costs

The costs to the Board of Equalization of administering the corporate license tax are very low; they amount to 0.4 percent of the amount collected from the tax. (See Appendix 7). The low level of cost is due largely to the fact that the Board relies largely on audits of the corporations' federal tax return to disclose errors by the taxpayer. Because the Internal Revenue Service audits the returns of major corporations yearly, it may be that independent auditing by Montana would yield sufficient additional revenue to justify the expense. The average cost reported by a sample of 25 corporations amounted to 10.2 percent of the amount of tax paid.

Summary

If the corporate income tax is shifted to consumers, it tends to become a nonuniform sales tax which burdens some consumers more than others. The results are likely to be a penalization of those who prefer relatively large amounts of commodities bearing a hearvy tax load and induce resource misallocation. The burden of the tax would undoubtedly be regressive. To the extent that the tax is not shifted it probably burdened those who were stockholders when the tax was imposed and increased to its present rate.

INHERITANCE TAXATION

The Montana inheritance tax is a levy on the amount received by an individual from the estate of a deceased person. The rates of this tax depend on the relationship between the deceased and the recipient, and on the amount of bequest. For a surviving spouse the rates vary from tqo percent of the first $25,000 of taxable inheritance to eight percent of the amount of the bequest in excess of $100,000. Distantly related and unrelated recippents pay corresponding rates of eight and thirty-two percent. Intermediate rates prevail for other degrees of relationship between the deceased and the donee. In addition to a rate structure which favors bequests between close relatives, there are exemptions from the amount of bequest which is taxable of $20,000 for a wife, $5,000 for a husband, and $2,000 for a child. The Board of Equalization administers the tax largely on the basis of information supplied by probate courts. These courts determine the amount of bequest to be received by each heir, and the tax exemptions and rates applied to these amounts. The tax is paid out of the estate prior to the distribution of the inheritances to donees.

Probably the most commonly made argument to justify the tax is that inheritances often provide economic ability to the recipients and that taxing bequests thus tends to result in a more equitable distribution of income. The following section accepts this value judgment as a criterion on which to evaluate the tax.

Burden distribution

Since the income of beneficiaries is neither the base of the tax nor a determinant of the tax rates, it is likely that the effective rate of the tax does not correspond closely with taxpayers' income. Preliminary results in a study of the burden distribution of this tax show that the effective rate of the tax is higher for recipients with incomes above $15,000 than for recipients with lower incomes.

Another argument sometimes made for inheritance taxation is that it provides a means for breaking up large concentrations of wealth. However, the low rates of the Montana tax on bequests to members of the immediate family--the maximum rate is eight percent--minimizes the ability of the Montana tax to achieve this goal, if it is desired.

Effects on Economic Behavior

Economists generally feel that inheritance taxation has few effects on the economic behavior of individuals or business firms. With the exception of life insurance, the tax is unrelated to the purchase of any particular commodity, so it almost surely has little effect on the allocation of resources by altering spending patterns. It has no direct effect on production methods used by business firms. Unless a person works in order to obtain money to pass on to his heirs, it seems unlikely that the tax affects incentive to work for a person may spend or save all

of his income he wants towithout paying any inheritance tax. In fact, an individual who wished to leave a large estate might work harder as a result of the tax so there could be a certain amount left after the tax.

The tax may encourage the maintenance of more than normal quantities of liquid funds by family business and the purchase of life insurance to provide this liquidity, so that funds will be available to pay the inheritance tax without disposing of a business when the owner(s) dies. The purchase of such life insurance would of course result in some reallocation of resources to the insurance industry. Regardless of the method the family firm used to maintain liquidity, investment by it would be reduced. This reduction might alter both the production method used by the firm and the amount of output of the types typically produced by small businesses. All of these effects would probably be undesirable from the viewpoint of maximizing consumer satisfaction, although their magnitude is probably small.

Administrative and Compliance Costs

Administrative of the Montana inheritance tax by the Montana Board of Equalization accounts for 1.1 percent of the revenue from the tax, as shown by the study reported in Appendix 7. Additionally, counties bear some costs in the administration of the tax. The cost to counties appears to average less than one percent of tax collections, but the reported amount varies widely from county to county. A study based on data reported by samples of lawyers, bankers, and accountants in the state indicates that the compliance costs of the tax total about twelve percent of tax collections.

Summary

A major argument made for inheritance taxation is that bequests often provide economic ability to the receipients. But the very structure of the tax implies a poor relationship between the amount of the present tax and the income of beneficiaries. The few effects that the tax may have on economic costs of the tax are moderate, its compliance costs are rather high.

MOTOR VEHICLE USER TAXES

Montana uses several taxes on motor vehicle fuels and motor vehicles to raise funds for highway and road construction. These taxes differ from most of our other taxes by being levies made on the basis of a governmental service received, rather than attempts to measure the economic ability of taxpayers. The primary reason that highways are provided governmentally rather than privately is that a government is the more efficient agency to collect the funds to finance them. (Imagine a toll booth at every intersection.) It is quite generally accepted that those who use the roads should pay for them. Taxes which vary according to road usage not only fulfill this judgment concerning the distribution of

highway costs, but also provide a guide concerning how much to spend for road construction: the state can build as many streets and highways as there are tax revenues to pay for.

In terms of revenue collected, Montana's taxes on motor vehicle fuel are the most important highway user taxes. Our tax of six cents per gallon on gasoline is, in fact, the second largest producer of revenue by the state government. This tax is collected from gasoline wholesalers by the State Board of Equalization. Taxes of nine cents and six cents per gallon respectively are similarly levied on diesel fuel and liquid petroleum gas. Automobile owners pay license fees of five or ten dollars, depending on the weight of the vehicle. Finally, there are license fees for trucks, semi-trailers, and trailers which range up to $435, depending on gross vehicle weight when loaded to capacity. These license fees are collected for the state by county treasurers' offices.

Burden Distribution

We have noted that one of the primary functions of highway taxation is to place a charge on motorists in proportion to the amount they use highways and streets. Taxation of gasoline seems to be the best way to make such a charge on the users of passenger cars and small trucks, for there is a fairly good correlation between the amount of gasoline used and the number of miles driven. If the government should subsidize the use of roads to compensate for this regressivity, the results would be discrimination in favor of those who drive more than the average and a misallocation of resources.

Some of the principles which apply to gasoline taxation also apply to the diesel fuel and liquid petroleum taxes. There is a relationship between the quantity of these fuels consumed and highway usage by trucks. However, the wear and tear, and to some extent congestion, of highways tends to increase progressively with the weight of the vehicle. Wear and congestion significantly increase highway construction costs. There is not a progressive relationship between vehicle weight and fuel usage. As a result, a fuel tax provides a less accurate user charge for trucks than for automobiles.

Montana license fees for trucks and trailers which increase with the weight of the vehicle are an apparent attempt to make a charge to cover the effect of vehicle weight on road construction costs. But construction costs resulting from actual or potential wear and tear of heavy vehicles depend both on the weight of the truck and the miles it is operated. A license fee takes no account of miles operated.

Of course it is also true that license fees do not reflect the amount of highway usage for passenger autos. Nevertheless, the number of licensed vehicles is related to potential highway utilization during peak traffic periods. The expected traffic during peak periods governs the construction expense. Consequently, license fees may be thought of as

meaningful charges for highway users. (And of course a portion of the license fee pays for license plates to identify vehicles for law enforcement purposes.)

Effects on Economic Behavior

Since the cost of highway usage to a person generally corresponds to the amount he uses the roads, he can theoretically be expected to use the roads only for as many trips as the benefit to him exceeds the cost of using the roads. Highway user taxes thus serve as a price. As for other commodities and services, people buy the amount of highways that they are willing and able to pay for. Under normal circumstances, a system of prices operating in this manner tends to allocate productive resources to the uses which will provide maximum consumer satisfaction. Highway user taxes which closely measure actual highway use are no exception to this general rule concerning maximum satisfaction.

But imperfections in the way that motor vehicle user taxes measure road usage may have some undesirable effects on resource allocation and efficiency of production methods. Because heavily loaded trucks (within maximum weight limits) pay little more tax than moderately loaded ones per miles they are operated, trucking firms are likely to load their vehicles to capacity. These loads may be heavier than would have been the case if taxation had provided for more direct measurement of road wear. If the charges are less than the highway construction costs for heavy loads, then truck as opposed to railroad transportation may be encouraged.

Administrative and Compliance Costs

Board of Equalization expenses of administering taxes on motor vehicle fuels amount to 0.9 percent of tax collections. The administrative and compliance costs of motor vehicle license fees cannot be separated from the costs connected with personal property taxation of vehicles. These combined costs are summarized in the section of this chapter on property taxation. As previously mentioned, taxes on fuels are collected from fuel dealers. The average compliance cost to these dealers seem to be low. The costs reported by dealers in the study reported in Appendix 7 amounted to 1.2 percent. However, the cost percentage tends to be larger for smaller than for larger dealers.

Summary

The taxation of automobile fuels provides a measure of highway usage by motorists, but fuel taxes provide a much poorer measure of road usage by trucks. Taxes which measure road usage serve as a price which distributes the cost of highways among those who receive the benefit of them and provides a measure of the amount of roads to build. Motor vehicle license fees cover the costs of plates for motor vehicle identification and tax the potential to drive during the periods of peak traffic which necessitates higher than normal road construction standards; license fees on trucks do not measure actual highway usage. Our system

of truck taxation probably encourages heavier loads than normal and may alter the amount of truck versus rail transportation. The administrative and compliance costs of fuel taxes are low. The costs for the license fees appear to be moderate.

ALCOHOLIC BEVERAGE TAXATION

Montana levies a tax of 20 percent on the retail selling price of liquor--$1.50 per 31 gallons of beer, and license fees of $25 to $600 per liquor or beer retail or wholesale outlet. In addition a portion of the profits of the state liquor monopoly could be considered a tax. The primary economic justification for the tax involves the fact that in the absence of taxation the consumption of alcoholic beverages produces costs to society (for example, more auto accidents which cause higher insurance rates, larger law enforcement costs) which are not borne by liquor consumers or producers. As a result of these social costs, consumption of alcoholic beverages probably exceeds the amount which provided maximum aggregate consumer satisfaction.[4] Taxation of these beverages serves the joint functions of reducing the quantity consumed to socially more desirable amounts and of compensating society for these additional costs incurred. Other arguments claimed for the tax are that liquor is "wicked" and that people really do not need to drink.

Burden Distribution

If we assume that the tax is shifted, the consumers of alcoholic beverages, of course, bear the burden of its taxation. The pricing policies of the Montana Liquor Control Board strongly imply shifting. Because it is the consumption of these beverages which provides the social costs, taxing consumers places the costs on those who cause them if the taxes just cover the costs. A recent study which estimates the amount of additional social costs and taxation of alcoholic beverages in Missoula County shows that total taxes collected by all levels of government, including federal, approximately equal the direct, measurable social costs.[5] However, the costs incurred in the local area exceed state plus local tax collections, and the federal government receives taxes far in excess of its costs.

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[4]Maximum satisfaction from a commodity is provided when the quantity produced is such that the satisfaction received from the last unit equals the variable cost of producing that last unit. Commodities tend to be produced by the private sector of the economy until the additional satisfaction to the consumer of the last unit equals the consumer's cost of buying that unit. The cost to society of the last unit equals the cost to the consumer plus any additional cost to society which is not borne by the consumer. When there is additional cost to society, as there is with alcoholic beverages, the cost to society of the last unit thus exceeds the benefit to the consumer. Since the cost exceeds benefit from this unit, society would be better off without it. Encouragement of smaller production of the commodity is consequently warranted.

[5]Joseph Awad, The Additional Social Costs and Taxation of Alcoholic Beverages in Missoula County, Montana, unpublished Master's thesis, University of Montana, Missoula, 1965.

Taxation of liquor as a result of the assertion that it is "wicked" would discriminate against those who disagree with that value judgment and enjoy liquor consumption. The argument that liquor should be taxed because people do not "need" to drink likewise discriminates against those who consume alcoholic beverages. There are a considerable number of other untaxed commodities which are not necessities.

Effect on Economic Behavior

Alcoholic beverage taxation tends to reduce the consumption of liquor and beer-unless the quantity demanded is insensitive to price--and consequently to cause a reallocation of some resources into the production of other commodities. As we have previously mentioned, this reallocation was one of the purposes of the taxation. So long as the tax does not exceed the amount necessary to reduce liquor consumption to the amount which is optimum in terms of consumer satisfaction, it improves overall resource allocation. If it should exceed this amount, then the reallocation would reduce aggregate satisfaction. The making of "home brew" and bootlegging tend to be encouraged by high tax levels, with a resulting loss in economic efficiency.

Administrative and Compliance Costs

Collection of the excise tax on liquor costs the Montana Liquor Control Board virtually nothing, because only the adding of a flat percentage to the price of products is required. For the same reason, the compliance cost is zero. The cost of administering the beer tax is .44 percent of tax revenue, and the cost of the beer and liquor license fee is 1.8 percent. The compliance cost to distributors of the beer tax as reported by a sample of these distributors averages 1.3 percent of tax paid. (See Appendix 7.) It may be concluded that the costs of administering and complying with Montana alcoholic beverage taxes are low.

Summary

Taxation of alcoholic beverages provides a means of distributing the additional social costs of alcoholic beverage consumption to the group responsible for the costs and to reduce the consumption of such beverages to the socially optimum amount. Current federal, state, and local taxes combined approximate the direct, measurable social costs but the federal government receives more of the tax revenues than it bears costs. Montana's taxes on alcohol seem to be inexpensive to administer and comply with.

CIGARETTE TAXATION

Montana levies a tax of eight cents per package of twenty cigarettes. The tax is remitted to the State Board of Equalization by cigarette wholesalers who stamp each package with a special machine to show that the tax has been paid. The wholesalers receive a fee for performing this service which is discussed in the administrative and compliance cost portion of this section. Although it is often argued that cigarettes should be taxed

because they are luxuries or "bad", probably the main reason for the tax is the revenue which it produces.

Burden Distribution

If the tax is shifted, as is probably the case, its burden is borne by smokers. It thus discriminates against those who purchase cigarettes, regardless of the motives involved in levying the tax. To any extent that it is not shifted, it can be expected to reduce the income of those involved in cigarette production and distribution. Cigarette smoking may cause some additional social costs, such as forest fires and irritation to nonsmokers.

Effects on Economic Behavior

Since the tax makes cigarette smoking more expensive, it may tend to discourage the purchase of cigarettes in favor of other purchases, with a resulting reallocation of resources. However, people's demand for cigarettes does not seem to be sensitive to price. Cigarette taxation might encourage pipe or cigar smoking, which Montana does not tax. The tax is a flat amount per package, regardless of the before-tax price, so it reduces the relative price differential between normally priced and economy priced brands. This relative price factor may be partially responsible for the virtual non-existence of economy brands. The tax has apparently no effect on production methods or resource availability (unless it should increase the work force by reducing smoking and lung cancer.)

Administrative and Compliance Costs

Cigarette wholesalers in Montana must stamp each package of cigarettes with a special machine they lease or buy for that purpose to show that the Montana cigarette tax has been paid. Each month the wholesaler has his machine pre-set for use by his county treasurer, and he pays the tax corresponding to the number of impressions set on the machine. The county treasurers remit the tax proceeds to the State Board of Equalization. Interviews with several county treasurers indicate that the costs to them of their administrative duties with the tax are negligible. The Board of Equalization's costs are .04 percent of tax revenue. We may conclude that the costs of administering the cigarette tax are very low.

As shown in Appendix 7 to this chapter, the estimated compliance costs of the tax to wholesalers amount to about 2.7 percent of the tax paid. These wholesalers receive five percent of the tax they collect as compensation for their compliance costs. Thus, they apparently earn a profit on the taxes they collect, while the payers of all other taxes must bear the compliance costs or try to shift them to consumers.

Summary

The Montana cigarette excise tax discriminates against the consumers of cigarettes, and to some extent cigarette distributors and producers. Since it causes higher prices for cigarettes, it may discourage cigarette

consumption and consequently reallocate resources in a way likely to reduce overall consumer satisfaction. However, the public does not seem to object greatly to paying the tax. The administrative cost of the tax is less than the amount paid to wholesalers for their compliance efforts.

GROSS RECEIPTS TAXATION OF UTILITIES

Montana taxes the gross revenue from electric energy sales, telephone service, intrastate telegraph, business, and freight lines. The rates of these taxes are as follows:

Electric energy	1.25 percent of gross receipts
Telephone service	1.5 percent of gross receipts
Telegraph service	1.5 percent of gross receipts
Freight lines	5.0 percent of gross receipts
Natural gas	½ cent per thousand cubic feet

The electric energy, telephone and telegraph services, and natural gas taxes are paid by utilities to the State Board of Equalization; the freight line and motor carriers taxes are collected by the Board of Railroad commissioners. The apparent rationale for these taxes is that a state franchise is necessary to engage in each of the businesses involved, so the state should levy a tax for granting the privilege to operate.

Burden Distribution

If we assume that the majority of each of these taxes is shifted forward to consumers, the buyers of electricity, telephone and telegraph service, and natural gas bear much of the burden of these taxes. Consumers who prefer to purchase larger than average quantities thus tend to be discriminated against. To the extent they are shifted, the transportation taxes are likely to be reflected in the general level of prices.

The freight lines and motor carriers taxes are probably also somewhat regressive. To the extent that these taxes are not shifted they discriminate against those supplying inputs to the firms involved, primarily employees and stockholders.

Effects on Economic Behavior

When the services covered by these taxes are made more expensive by shifting the taxes, purchasers may attempt to substitute other commodities for the services. If this substitution results from a change in consumer spending, the accompanying reallocation of resources will directly tend to reduce aggregate consumer satisfaction. Also, the cost per unit of utility service is likely to rise. In the event that business firms purchase less of the taxed services and alter their production methods accordingly, a reduction in operating efficiency and indirectly in living standards is likely to result. However, because of the low level of these taxes, any effect that they have on economic behavior is likely to be obscured by other factors.

Administrative and Compliance Costs

Because of the very small amount of money involved, the Board of Equalization was unable to estimate the precise cost of administering utility company gross receipt taxes alone. The combined cost of a number of special license taxes such as these in $2,000 per year, or .08 percent of tax collections. The compliance costs of the utility gross receipts as reported by a number of utilities in the state are only about .1 percent of tax paid.

Summary

Taxation of the gross receipts of utility companies may discriminate against purchasers of large amounts of these products. If the tax should reduce the consumption of utility workers and stockholders of the utility, companies could be affected. Purchases of the utility services may be curtailed with a resulting misallocation of resources. The administrative and compliance costs of the taxes seem low.

INSURANCE COMPANY TAXATION

Insurance companies pay a tax of 2.25 percent of gross premiums collected in Montana in lieu of property taxes. The tax is collected by the state auditor's office. No data are available to compare present insurance company tax liabilities with those which would prevail if some method of taxing insurance company assets was deivised. If the tax liability is greater under the present method, then the purchasers of insurance and insurance company owners and personnel tend to be discriminated against, and less insurance is probably purchased in a manner similar to that which prevails for the gross receipts taxes previously discussed. Should the tax be lower, insurance firms and their customers and the purchase of insurance are likely to be encouraged.

The cost to the state auditor's office of administering the tax is 1.9 percent of tax revenues, and the compliance cost as reported by a sample of companies was 6.2 percent, as demonstrated in Appendix 7.

TAXATION OF MINERAL AND OIL PRODUCTION

Severance Taxation

Two unique types of taxes apply to mineral and oil producers in Montana. One of these taxes is the severance tax, which is a levy on the amount of a natural resource taken out of the ground. The other is net proceeds taxation, which is explained below. Our severance taxes are a graduated percentage of the value of metal produced (the maximum rate is 1.25 percent); 2.0 to 2.5 percent of the value of oil, depending on production plus one-fourth to one-half cent per barrel produced; five cents per ton of coal; four cents per every 376 pound barrel of cement; and five cents per ton of vermiculite. The apparent purpose of severance taxes is to compensate society for the depletion of natural resources.

Like other taxes on particular commodities, this tax may raise the prices of the taxed commodities. If so, the purchasers of these resources or of

commodities using these resources in their production would bear the burden of the tax. Since these consumers are the ones receiving the benefit from these natural resources, the public may deem it to be fair that these consumers bear the burden of the tax.

The higher prices also may cause users of these natural resources to buy less of them. One result could be a reallocation of productive resources out of mining and oil production and into other uses or where the taxed natural resources were used as inputs in the production of other commodities, the firms involved might change to different production methods unsing less of the taxed resources. The results of these changes will tend to be a reduction in present consumer satisfaction and business operating efficiency. However, the severance taxes may have been enacted as conservation measures. If so, a reduction of present living standards in favor of higher standards in the future is their logical result. However, the size of any such effects is likely to be very small.

As previously mentioned, the administrative costs of the group of taxes which includes severance taxes is .08 percent. Appendix 7 suggests that severance tax compliance costs vary widely by type of tax. They are estimated to be .07 percent for metalliferous mines, .33 percent for oil producers, .12 percent for cement dealers, and 49.7 percent for coal dealers. (The figure for the coal dealers tax is very high because the tax yields almost no revenue).

Net Proceeds Taxation

Mining and oil producing property is assessed for property tax purposes by a differebt method than is used for other property in Montana. The reason for this difference is that the value of mineral property depends on the amount it will produce, but it is generally difficult to estimate production before it occurs. An assessor cannot examine a mine or oil well as he can a house to determine its value. The substitute method which has been enacted for taxing mining and oil property is based on the net yearly return from the property.

This net return is referred to as the "net proceeds" of the property. It is deifined as the gross sale value of production less the costs of production, transportation, marketing, reduction of milling, and amortized property repairs and development. Outlays for repairs and development of property must be amortized over a ten-year period.[6] Royalties are deductible, but they are assessed in the name of the person receiving them. The net proceeds figure determined by this method is used as the taxable value of the mining or oil property involved for the year in question, and the state property tax rate plus the rates of the local governments in which the property is located are levied against this taxable value.

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[6]A two-year period is authorized for oil wells less than 3,000 feet in depth.

The State Board of equalization administers the determination of net proceeds values. Yearly, the operator of each mine or oil well must submit a report to the Board listing the amount of his gross revenues and of each allowable deduction, plus the repairs and improvements he has made during the year. On the basis of this information, the Board certifies the amount of net proceeds from the property and informs the county involved of the amount. The Board maintains a record for ten years of each year's expenditures for repairs and improvements to check the yearly amount deducted. Because of the cost which would be involved and the lack of usable data the Board does not conduct field audits of the accounts of the mine and oil operators, but it does verify the amount of crude oil production by comparing the reported figures with those collected by the Oil and Gas Conservation Commission and through crude oil returns information. The statutes establishing net proceeds taxation provide no penalty for operators who fail to report net proceeds information. The lack of such a penalty hampers efficient administration of the tax in some instances.

Tables 6 and 7 show the various items allowed as deductions in determining net proceeds as a percentage of gross income; samples of deductions claimed by twelve metal mining firms and twelve oil producers are cited respectively. From the number of firms reporting these items and from the coefficients of variation, the reader may note that the items deducted vary from firm to firm.

In general, the analysis of the equity and economic effects of net proceeds taxation is the same as for normal property taxation. But there are certain differences which may result from mineral producing property being taxed at a lower or higer rate than other real estate. As we noted in the section of this chapter on property taxation, the value of property is theoretically determined by capitalization of net earnings expected from it in the future. Typical capitalization rates range from five to ten percent for a property expected to yield income for a considerable number of years. With these capitalization rates, the value of the property will range from ten to twenty times the expected average yearly earnings. (Average yearly earnings divided by the capitalization rate equals the capitalized property value, so the lower the rate, the greater the capitalized value.) For city lots and improvements value is appraised at about forty percent of true value and then multiplied by the thirty percent property classification factor to determine taxable value. Taxable value of town property is consequently about twelve percent of market value.

On the other hand, the mineral and oil producing property net proceeds for a year are taxed at full value. If the value of the mineral or oil property involved equals these earnings capitalized at a rate of about twelve percent, then the tax as a percentage of the value of property will be about the same for the mineral as for the regular property. If a mineral producing property lead a short productive life expectancy or if it was a very risky proposition, then a capitalization rate of more than twelve percent would probably be indicated, and the present net proceeds method would be likely to tax the mineral property more than some other

TABLE 6

DEDUCTIONS REPORTED IN THE DETERMINATION OF NET PROCEEDS BY A SAMPLE OF TWELVE MINING FIRMS

Production	Number of Mines Reporting	Average Amount as a Percentage of Gross Sales	Coefficient of Variation of Average Amount
Cost of Extraction	11	48.5%	33.6%
Cost of Transportation to reduction works	8	6.9	92.2
Cost of sale of Crude Ore	2	8.8	221.6
Cost of Reduction of Crude Ore	7	14.6	119.8
Cost of Marketing Minerals	6	6.7	170.1
Cost of Construction, Repairs and Betterments	5	6.6	110.1
Cost of Repairs and Replacements to Reduction Works	2	3.0	40.0
Depreciation of Reduction Works	8	0.9	102.2

Source: Montana Board of Equalization data.

TABLE 7

DEDUCTIONS REPORTED IN THE DETERMINATION OF NET PROCEEDS BY A SAMPLE OF TWELVE OIL PRODUCING FIRMS

Production	Number of Producers Reporting	Average Amount as a Percentage of Gross Sales	Coefficient of Variation of Average Amount
Cost of Extraction	12	27.0%	50.7%
Capital Expenditures	12	27.9	71.0
Other Expenditures	2	2.8	235.7

Source: Montana Board of Equalization data.

kinds of property. On the other hand, a proven mineral property which was expected to continue producing for many years might call for a capitalization rate of less than twelve percent. In such a situation, the net proceeds method of taxation probably produces lower taxes than on some other property types.

When mineral property is taxed favorably compared to other property, owners of the mineral property and possible buyers of its output will tend to be discriminated in favor of. Investment in such property will be encouraged. If the comparative level of mineral property taxation is unfavorable, the opposite is likely. In either case, the resulting alteration

of income distribution would probably be unfair, and the reallocation of resources would tend to reduce overall consumer satisfaction.

The net proceeds method of valuing mineral producing land is probably more equitable and less subject to adverse economic effects than an alternative, the taxation of gross proceeds at a lower overall rate. The purpose of proceeds taxation is to attempt to tax the value of property. Property's value is based on its net, not its gross return. The gross proceeds estimate method provides an inaccurate measure of net return, because various deposits of mineral and oil vary widely in their cost of extraction.

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